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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,181	08/09/2001	Craig Schweinhart	PD-200274	2349

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EXAMINER

NGUYEN, BRIAN D

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,181

Applicant(s)

SCHWEINHART ET AL.

Examiner

Brian D. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 and 6 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-9,11,12,14-23,25,26,28-30,32,33 and 35 is/are rejected.
- 7) ☒ Claim(s) 10,13,24,27,31 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation "the packets" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 8-12, 15-19, 22-26, 29, 30, 32, 33, and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Montpetit (6,366,761) in view of Liebowitz (5,812,545).

As to claims 1, 22, and 29 Montpetit discloses a method of scheduling packets within a terminal [Fig. 3, ground terminals 21a and terminal service applications 20a (considered a terminal) col. 5, lines 6-10], used in a satellite communications system [col. 2, lines 55-60], the method comprising: transmitting bandwidth allocation requests to a satellite based upon prior bandwidth allocations [Fig. 5, as illustrated in block 116; col. 9, lines 12-25; and col. 10, lines 1-

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5] and packets stored within a plurality of queues of the terminal [col. 7, lines 28-30], the plurality of queues [Fig. 6, 130, 132, 134, 136 (plurality of queues)] being prioritized [col. 7, lines 30-35]; receiving current bandwidth allocations in response to the transmitted bandwidth allocation requests [col. 11, lines 12-13, (receiving bandwidth allocation response, illustrated in Fig. 5 at block 118 to the bandwidth requested, illustrated in Fig. 5 at block 114 or 116)]; and preparing a ... plan [col. 7, lines 54-55, an example bandwidth allocation for a frame, illustrated in Fig. 7] for transmitting the stored packets based upon the current bandwidth allocations and the prioritization of the plurality of queues [col. 11, lines 16-19], wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations [col. 8, lines 1-5, a ground terminal allocates (assigns) a specified number of slots per frame (part of current bandwidth) for transmission a corresponding number of data packets (packet-to-packet transmission opportunities)]. Montpetit does not specifically disclose a packet scheduler in order to prepare a schedule plan, but Liebowitz teaches scheduling packet to transmit performed by ground terminals [col. 15, lines 28-30]. It would have been obvious to one of ordinary skill in the art to combine Montpetit with Liebowitz for the purpose of having a schedule plan to transmit packets. The motivation is bandwidth management.

As to claims 2, 23 and 30 Montpetit discloses the plurality of queues in the transmitting step corresponding to user services [Fig. 5, P1 corresponds to queue 130, P2 corresponds to 132, P3 corresponds to 134, P4 corresponds to 136 (P1 is a higher level priority, quality of service or user service, than P2, P3, P4)] that include a connection-oriented service and a connectionless service [col. 6, lines 47-52, multiple classes of service supported such as ATM connection-oriented) or IP (connection less)].

As to claims 4, 25 and 32 Montpetit discloses that the plurality of queues in the transmitting step is prioritized using a weighting scheme that is based upon user services [col. 6, lines 1-14, priority status are defined and denoted as P1, P2, P3, and P4; P1 priority status receive the highest quality of transmission service (weighting scheme)].

As to claims 5, 26 and 33, Montpetit discloses servicing the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system [packets queued according to their priority level P1 to P4, and transmitted also according to their priority level (selective forwarding), and guaranteed service is scheduled according to a plan].

As to claims 7, 28 and 35, Montpetit discloses that the packet transmission opportunities in the preparing step are time slots in a TDMA (time division multiple access) frame [Fig. 7, shows an assigned frequency (9 divided up in multiple time slots (t_1 , t_2 , ..., t_n), that is going to be used to transmit packets].

As to claim 8, Montpetit discloses a terminal apparatus [Fig. 3, ground terminals 21a and terminal service applications 20a (considered a terminal)] for transmitting packets to a satellite communications system [Fig. 3, col. 2, lines 55-60], comprising: a plurality of queues [Fig. 6, 130, 132, 134, 136 (plurality of queues)] configured to store the packets [col. 7, lines 28-30], the plurality of queues being prioritized [col. 7, lines 30-35]; and a bandwidth-on-demand control logic [Fig. 3, ground terminal 21] configured to prepare ... [col. 7, lines 54-55, an example bandwidth allocation for a frame illustrated in Fig. 7] for transmitting the stored packets based upon current bandwidth allocations and the prioritization of the plurality of queues [col. 11, lines 16-19], the current bandwidth allocations being based upon prior bandwidth allocation

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[col. 2, lines 60-65, uplink bandwidth is allocated... to meet or exceed a user-selected standard of data transmission service (bandwidth allocated according to prior service selection of the user)] and the stored packets [col. 7, lines 28-30], wherein the ... assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations [col. 8, lines 1-5, a ground terminal allocates (assigns) a specified number of slots per frame (part of current bandwidth) for transmission of a corresponding number of data packets (packet-to-packet transmission opportunities)]. Montpetit does not specifically disclose a packet scheduler in order to prepare a schedule plan, but Liebowitz teaches scheduling packet to transmit performed by ground terminals [col. 15, lines 28-30]. It would have been obvious to one of ordinary skill in the art to combine Montpetit with Liebowitz for the purpose of having a schedule plan to transmit packets. The motivation is bandwidth management.

As to claim 9, Montpetit discloses that the plurality of queues correspond to user services [Fig. 5, P1 corresponds to queue 130, P2 corresponds to 132, P3 corresponds to 134, P4 corresponds to 136 (P1 is a higher level priority, quality of service or user service, than P2, P3, P4)] that include a connection-oriented service and a connectionless service Ecol. 6, lines 47-52, multiple classes of service supported such as ATM (connection-oriented) or IP (connection less)].

As to claim 11, Montpetit discloses the plurality of queues are prioritized using a weighting scheme that is based upon user services [col. 6, lines 1-14, priority status are defined and denoted as P1, P2, P3, and P4; P1 priority status receive the highest quality of transmission service (weighting scheme)].

As to claim 12, Montpetit discloses a queue servicing logic [Fig. 3, ground terminal 21] coupled to the plurality of queues and configured to service the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system [col. 11, lines 16-19 and col. 7, lines 54-57, an example of bandwidth allocation (schedule plan) for a frame illustrated in Fig. 7. The table is indexed horizontally by frequencies, in the uplink communication spectrum (each frequency in the table is an up link channel)].

As to claim 14, Montpetit discloses that the packet transmission opportunities are time slots in a TDMA (time division multiple access) frame [Fig. 7, shows an assigned frequency (f) divided up in multiple time slots (t1, t2, ... , tn) that is going to be used to transmit packets].

As to claim 15, Montpetit discloses a satellite communications system [Fig. 3] comprising: a hub [Fig. 3, ground terminal 23a, satellite network management applications 24a, and network operations and control system 25a (considered a hub)] configured to control bandwidth allocations in conjunction with a satellite [col. 5, lines 11-17]; and a plurality of terminals [Fig. 3, ground terminals 21 and terminal service applications 20] configured to issue bandwidth allocation requests to the satellite, each of the terminals comprising, a plurality of queues [Fig. 6, 130, 132, 134, 136 (plurality of queues), col. 7, lines 28-29, the data packet send queue is maintained in the memory of a ground terminal (each terminal includes a send queue)] configured to store the packets, the plurality of queues being prioritized [col. 7, lines 30-35], and a bandwidth-on-demand control logic [Fig. 3, ground terminal 21] configured to prepare ... [col. 7, lines 54-55, an example of bandwidth allocation for a frame illustrated in Fig. 7] for transmitting the stored packets based upon current bandwidth allocations and the prioritization of

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the plurality of queues [col. 11, lines 16-19], the current bandwidth allocations being based upon prior bandwidth allocation [col. 2, lines 60-65, uplink bandwidth is allocated... to meet or exceed a user-selected standard of data transmission service (bandwidth allocated according to a prior service selection of the user)] and the stored packets [col. 7, lines 28-30], wherein the ... assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations [col. 8, lines 1-5, a ground terminal allocates (assigns) a specified number of slots per frame (pad of current bandwidth) for transmission of a corresponding number of data packets (packet to packet transmission opportunities)]. Montpetit does not specifically disclose a packet scheduler in order to prepare a schedule plan, but Liebowitz teaches scheduling packet to transmit performed by ground terminals [col. 15, lines 28-30]. It would have been obvious to one of ordinary skill in the art to combine Montpetit with Liebowitz for the purpose of having a schedule plan to transmit packets. The motivation is bandwidth management.

As to claim 16, Montpetit discloses the that plurality of queues correspond to user services [Fig. 5, P1 corresponds to queue 130, P2 corresponds to 132, P3 corresponds to 134, P4 corresponds to 136 (P1 is a higher level priority, quality of service or user service, than P2, P3, P4) that include a connection-oriented service and a connectionless service [col. 6, lines 47-52, multiple classes of service supported such as ATM (connection-oriented) or IP (connection less)].

As to claim 18, Montpetit discloses that the plurality of queues are prioritized using a weighting scheme that is based upon user services [col. 6, lines 1-14, priority status are defined and denoted as P1, P2, P3, and P4; P1 priority status receive the highest quality of transmission service (weighting scheme)].

As to claim 19, Montpetit discloses a queue servicing logic [Fig. 3, ground terminal 21] coupled to the plurality of queues and configured to service the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system [col. 11, lines 16-19 and col. 7, lines 54-57, an example of bandwidth allocation (schedule plan) for a frame, illustrated in Fig. 7. The table is indexed horizontally by frequencies in the uplink communication spectrum (each frequency in the table is an up link channel)].

As to claim 21, Montpetit discloses that the packet transmission opportunities are time slots in a TDMA (time division multiple access) frame [Fig. 7, shows an assigned frequency (f) divided up in multiple time slots (t1, t2, ... , tn) that is going to be used to transmit packets].

Allowable Subject Matter

5. Claims 3 and 6 allowed.
6. Claims 10, 13, 24, 27, 31, and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claims 17 and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

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8. Applicant's arguments filed 8/9/05 have been fully considered but they are not persuasive.

The applicant argued that neither the cited description (and associated text) nor anywhere within Montpetit is there a disclosure of using any type of "prior bandwidth allocations," much less "transmitting bandwidth allocation requests to a satellite **based upon prior bandwidth allocations** and packets stored within a plurality of queues of terminal.". The examiner disagrees because Montpetit clearly teaches this limitation in col. 9, lines 12-25 and col. 10, lines 1-5). For example, col. 9, lines 22-25, Montpetit teaches requesting **additional** uplink bandwidth to accommodate the increased rate at which the data packets send queue is receiving data packets. And in col. 10, lines 1-5, Montpetit teaches "For the ground terminal to transmit the bandwidth request to the serving satellite, the ground terminal must **use** either **existing** bandwidth **already allocated** to the ground terminal (e.g., for transmission of other data packets in one or more of the data packet send queues), or use a contention channel. The existing bandwidth is the prior bandwidth allocated to the ground terminal.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

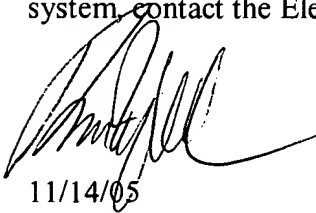
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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian D. Nguyen whose telephone number is (571) 272-3084. The examiner can normally be reached on 7:30-6:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



11/14/05

BRIAN NGUYEN
PRIMARY EXAMINER